PLANT AND SOIL

Contents Volume 259, Nos. 1–2 February 2004

Microbial growth under the snow: Implications for nutrient and allelochemical availability in temperate soils
S.K. Schmidt and D.A. Lipson 1–7

Nutrient addition affects AM fungal performance and expression of plant/fungal feedback in three serpentine grasses
D.J. Gustafson and B.B. Casper 9–17

Identifying microorganisms which fill a niche similar to that of the pathogen: a new investigative approach for discovering biological control organisms
B. Yin, A.J. Scupham, J.A. Menge and J. Borneman 19–27

Micro-scale spatial heterogeneity and the loss of carbon, nitrogen and phosphorus in degraded grassland in Ordos Plateau, northwestern China
X. Cheng, S. An, S. Liu and G. Li 29–37

Fine root dynamics of pedunculate oak and narrow-leaved ash in a mixed-hardwood plantation in clay soils
F. Ponti, G. Minotta, L. Cantoni and U. Bagnaresi 39–49

Element concentrations in boreal, coniferous forest humus layers in relation to moss chemistry and soil factors
P. Tamminen, M. Starr and E. Kubin 51–58

Critical N:P values: Predicting nutrient deficiencies in desert shrublands
R.E. Drenovsky and J.H. Richards 59–69

Genotypic variation in common bean in response to zinc deficiency in calcareous soil
G. Hacisalihoglu, L. Ozturk, I. Cakmak, R.M. Welch and L. Kochian 71–83

Total, and chemical fractions, of nitrogen and phosphorus in *Eucalyptus* seedling leaves: Effects of species, nursery fertiliser management and transplanting
D.C. Close and C.L. Beadle 85–95

Relationship between behavior of dehydromatricaria ester in soil and the allelopathic activity of *Solidago altissima* L. in the laboratory
K. Kobayashi, H. Koyama and I.S. Shim 97–102

Contrasting responses to boron deficiency in barley and wheat
J. Wongmo, S. Jamjod and B. Rerkasem 103–110

Recent ^{14}C-labelled assimilate allocation to Scots pine seedling root and mycorrhizosphere compartments developed on reconstructed podzol humus, E- and B-mineral horizons
J. Heinonsalo, K.-R. Hurme and R. Sen 111–121

Release of potassium, calcium, iron and aluminium from Norway spruce, Scots pine and silver birch logging residues
M. Palviainen, L. Finér, A.-M. Kurka, H. Mannerkoski, S. Piirainen and M. Starr 123–136

Distribution of ericoid mycorrhizal endophytes and root-associated fungi in neighbouring Ericaceae plants in the field
D.J. Midgley, S.M. Chambers and J.W.G. Cairney 137–151

Gas exchange, water relations and osmotic adjustment in two scion/rootstock combinations of *Prunus* under various salinity concentrations
R. Massai, D. Remorini and M. Tattini 153–162

Effect of NaCl and KCl salts on the growth and solute accumulation of the halophyte *Atriplex nummularia*
J. Ramos, M.J. López and M. Benlloch 163–168

Elevated CO_2 increase soil moisture and enhances plant water relations in a long-term field study in semi-arid shortgrass steppe of Colorado
J.A. Nelson, J.A. Morgan, D.R. LeCain, A.R. Mosier, D.G. Milchunas and B.A. Parton 169–179

Cadmium tolerance and hyperaccumulation in a new Zn-hyperaccumulating plant species (*Sedum alfredii* Hance)
X.E. Yang, X.X. Long, H.B. Ye, Z.L. He, D.V. Calvert and P.J. Stoffella 181–189

Zinc rhizotoxicity in wheat and radish is alleviated by micromolar levels of magnesium and potassium in solution culture
J.F. Pedler, T.B. Kinraide and D.R. Parker 191–199

Relative effectiveness of calcium and magnesium in the alleviation of rhizotoxicity in wheat induced by copper, zinc, aluminum, sodium, and low pH
T.B. Kinraide, J.F. Pedler and D.R. Parker 201–208

Phosphorus mobilization in agroforestry: Organic anions, phosphatase activity and phosphorus fractions in the rhizosphere
S. Radersma and P.F. Grierson 209–219

Modeling soil water regime and corn yields considering climatic uncertainty
G. Huang 221–229

Factors influencing seed dormancy and germination in sand, and seedling survival under desiccation, of *Psammochloa villosa* (Poaceae), inhabiting the moving sand dunes of Ordos, China
Z. Huang, M. Dong and Y. Gutterman 231–241

Interactions of maize and Italian ryegrass in a living mulch system: (2) Nitrogen and water dynamics
M. Liedgens, E. Frossard and W. Richner 243–258

Uptake of nitrogen by rice studied with a ^{15}N point-placement technique
J.E. Sheehy, M. Mnzava, K.G. Cassman, P.L. Mitchell, P. Pablico, R.P. Robles and A. Ferrer 259–265

Green and senescent leaf phenolics showed spatial autocorrelation in a *Quercus robur* population in northwestern Spain
F. Covelo and A. Gallardo 267–276

The effect of the soil-feeding termite *Cubitermes niokoloensis* on soil microbial activity in a semi-arid savanna in West Africa
D. Ndiaye, R. Lensi, M. Lepage and A. Brauman 277–286

Floral analysis as a tool to diagnose iron chlorosis in orange trees
M. Pestana, A. de Varennes, M.J. Goss, J. Abadía and E.A. Faria **287–295**

Effect of soil macroaggregates crushing on C mineralization in a tropical deciduous forest ecosystem
F. García-Oliva, M. Oliva and B. Sveshtarova **297–305**

Comparison of Nitrogen mineralization from ^{15}N-labeled organic amendments under flooded and upland conditions
S. Takahashi, H. Ueno and S. Yamamuro **307–314**

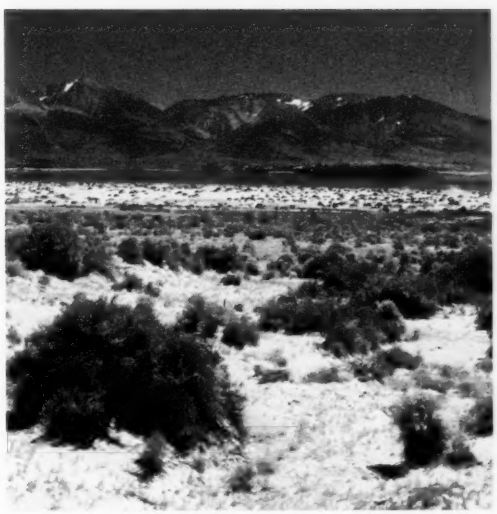
Mineral N dynamics, leaching and nitrous oxide losses under maize following two-year improved fallows on a sandy loam soil in Zimbabwe
R. Chikowo, P. Mapfumo, P. Nyamugafata and K.E. Giller **315–330**

Isotopic estimates of new carbon inputs into litter and soils in a four-year climate change experiment with Douglas-fir
E.A. Hobbie, M.G. Johnson, P.T. Rygiewicz, D.T. Tingey and D.M. Olszyk **331–343**

Peatland carbon afflux partitioning reveals that *Sphagnum* photosynthate contributes to the DOC pool
N. Fenner, N. Ostle, C. Freeman, D. Sleep and B. Reynolds **345–354**

Environmental manipulation treatment effects on the reactivity of water-soluble phenolics in a subalpine tundra ecosystem
V. Thoss, A. Shevtsova and M.-C. Nilsson **355–365**

Nutrient uptake by rice and soil solution composition under atmospheric CO_2 enrichment
Y. Yamakawa, M. Saigusa, M. Okada and K. Kobayashi **367–372**



Cover Photo: Shrub species of Great Basin Deserts are differentially limited by N and P. This photo in the Mono Lake basin shows *Sarcobatus vermiculatus* (N limited; center) and *Chrysothamnus nauseosus* (P limited; right foreground) and sparse understory of saltgrass (*Distichlis spicata*) growing where mean annual precipitation, which mostly arrives as snow, is 160 mm in the rain shadow of the Sierra Nevada Mountains (background). Elevation: 1958 m; Lat, Long: 38°5′N, 118°58′W. Photo by JH Richards.

Plant and Soil Vol. 259, pp. 59–69.